

REMARKS

With claims 5-8, 16-17, 20-21, 23-26, 32-33 previously pending, the present amendment cancels claims 23-24.

Section 103 Rejection Based on Smith in view of Patel

Claims 23-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (U.S. Patent No. 6,184,065, hereafter Smith) in view of Patel et al (U.S. Patent No. 6,550,263). Claims 23-24 have been cancelled rendering this rejection moot.

Section 103 Rejection Based on Smith in view of Tilton

Claims 5-8, 16 and 32-33 stand rejected in paragraph 6 of the Office Action under 35 U.S.C. 103 as being unpatentable over Smith in view of Tilton et al (U.S. Patent No. 5,719,444, hereafter Tilton). This rejection is respectfully traversed as addressed below.

The last two sentences of paragraph 6 appear to mistakenly repeat the sentences from paragraph 5 dealing with Smith and Patel. In a telephone conference between Examiner Datskovskiy and the undersigned on April 4, 2005, The Examiner confirmed that the last two sentences of paragraph 6 were incorrect as written. The Examiner stated that to correct the Office Action, the second to the last sentence of paragraph 6 should be deleted, and the name Patel should be replaced in the last sentence of paragraph 6 with Tilton.

With the corrections noted, the Office Action states that Smith teaches in Fig. 26 a cooling assembly comprising: an electronic package having a cavity; a die 2 with electronic components mounted using compliant interconnect spring coolants 15 formed using lithography. The Office Action further states that Smith does not teach said package having a coolant port that allows a coolant to enter the cavity and directly cool the die. The Office Action, however, continues stating Tilton teaches such a cooling assembly, Figs. 1-4 comprising: an electronic package 10, a plurality of dies 11; a bottom substrate 26 and a

coolant surrounding interconnects within the cavity 18; an inlet 22 and an outlet 23 coolant ports that allow the coolant to enter the cavity 18, the coolant directly cooling each active surface of each die 11. The Office Action then states it would have been obvious to one skilled in the art to employ a cooling system shown by Tilton in the device by Smith in order to enhance a heat dissipation.

In response to this rejection, Applicant maintains that Smith and Tilton are not reasonably combinable to form a functional device, and thus a person of ordinary skill in the art would not be lead to combine these two references to form the present invention. Tilton discloses "insertion pins" as interconnect pins 27 for inserting into dies 11. (Tilton, col. 5, line 16 et. seq.) The compliant pins of Smith would not be combined with Tilton by a person of ordinary skill because the Smith "compliant" nature pins would prevent insertion of the insertion pins 27 into the dies 11 in Tilton. The pins would bend rather than easily insert into dies 11. "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion of motivation to make the proposed modification." M.P.E.P. 2143.01 (page 2100-127, citing *In re Gordon*, 221 USPQ2d 1125 (Fed. Cir. 1984.))

Further, for a *prima facie* case of obviousness, "there must be a reasonable expectation of success... and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." M.P.E.P. 2143 (page 2100-124, citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991.)) As indicated above, the "compliant" pins of Smith will not satisfactorily insert into the dies of Tilton. Tilton particularly notes the stiffness and size required for the pins to function, noting that "the cross-section area and length of the insertion pins 27 is critical ... during insertion" (Tilton, col. 5, lines 28-31). Further, Smith does not reference a need for cooling of the die during testing, and provides no motive for looking for a cooling structure such as Tilton. The only motive to combine the cases appears to be provided from Applicant's disclosure, which is improper as noted above.

Claim 32 in particular claims that the compliant interconnect is not inserted into a die, a feature particularly distinguishing over a combination of Smith and Tilton.

With claims 5-8, 16 and 32-33 all claiming "compliant interconnects," Applicant maintains that these claims are allowable as non-obvious under 35 U.S.C. 103 over Smith in view of Tilton.

Allowable Subject Matter

Claims 17, 20-21 and 25-26 are indicated as being allowed.

Conclusion

In light of the above amendments and remarks, claims 5-8, 16-17, 20-21, 25-26 and 32-33 are now all believed to be in condition for allowance. Accordingly, reconsideration and allowance of these claims is respectfully requested.

No fee is believed due with this response. Should a fee be due, the Commissioner is hereby authorized to charge the fee to Deposit Account No. 06-1325.

Respectfully submitted,

Date: April 5, 2005

By: Thomas A. Ward

Thomas A. Ward
Reg. No. 35,732

FLIESLER MEYER LLP
Four Embarcadero Center, Fourth Floor
San Francisco, California 94111-4156
Telephone: (415) 362-3800